



# Diskeeper to the Rescue

CYDEX Corporation, located in Calabasas, California, is a solution provider specializing in developing advanced information technology systems and enterprise-scale line-of-business applications. Since 1979, CYDEX Corporation has offered its clients exceptional software and systems engineering expertise culled from a broad spectrum of experience in industries as diverse as publishing, transportation, telecommunications, healthcare, manufacturing, electronics and aerospace.

Gerald Sotolov, President of CYDEX, recently related [to Diskeeper Corporation] an incident involving a user of CYDEX's 'Container Freight Management System' (CFMS) — a transportation management and integrated business system.

"Diskeeper® defrag software is a valuable tool; much, much more than just AN INVALUABLE TOOL — it is a lifesaver — and this is a story about a situation that happened to us recently," related Sotolov.

CYDEX's client provides freight consolidation and forwarding services and does not have I.T. personnel on staff. All I.T. issues are outsourced to CYDEX Corporation as the principle systems integrator and developer of the client company's line-of-business application.

This client operates every aspect of their business enterprise in real time (real time information sharing with clients and business partners as well as real time processing of multiple business functions through a highly-integrated application structure). The client has hard-coded scheduling requirements where even the slightest delays due to system downtime, could result in hundreds of thousands of dollars of lost revenue and associated costs, and have far-reaching business implications. For this particular client: "time is absolutely money".

## The Challenge

This client infrastructure involves Microsoft Windows Server 2003 with multiple rack-mount servers, each server handling specific network tasks (file sharing, web services, local and remote print services, background processes, etc.)

The line-of-business application provides comprehensive functional integration for applications across multiple business departments. EVERYTHING is handled through a

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workflow management scheme. All information elements such as Customer Relationship Management transactions, accounting, document management, and operations, are shared across all departments in real time.

## Symptoms of the problem:

“Late one afternoon, we received a frantic, call from an important client who uses one of our enterprise-scale, line-of-business applications. That application happens to be as mission critical as any application can be as ALL of the client’s business systems share common database files and a unified, company-wide CRM interface. And our client, who had recently just spent tens of thousands of dollars re-tooling their data center infrastructure with brand new, high-performance server and networking hardware, happens to be in the business of transporting perishable food products whose shipping has to meet the scheduled timetables of several other trucking, rail, and maritime shipping partners. The core process in the central database system, which manages all subordinate database processes, was assigning transaction accession identifiers so slowly that they appeared to be nonsensical and were causing wide-spread irregularity in system processes that were known [over a decade long software life-cycle] to be fully functional in normal operation.

“This was a new installation with new hardware,” explained Sotolov. “Our line-of-business application was running smoothly on this platform and had never experienced the sort of symptoms that we discovered when we investigated the problem. The client had not yet implemented the sort of I.T. management practices (such as routine disk defragmentation) that would have prevented the problem from occurring, or would have mitigated the impact of poor disk performance. The issue arose late on a Friday afternoon when management and technical support resources were becoming scarce. The initial impact of the system-wide problem was severe — bringing many operations to a standstill — and, reporting of the problem symptoms confounded the personnel who had worked with the application for many years [without ever seeing anything like this]. On our end, the initial impression was that one of our developers “broke” something — as deep and far-reaching system changes to the application were recently being deployed.”

“The application that we developed for our client is a pervasively-integrated set of complex modules utilizing several large database sub-systems in an architecture managed by a single-point user interface and real-time web services. Downtime means ‘out of business time’ — as all order processing, operations, and accounting functions are handled by our application. Ultimately, 15 or so of our client’s people sat around waiting for the so-called ‘system problem’ to be resolved.

“Historically, our application is quite tried-and-true — having been deployed for 13 years — and, it was painstakingly tested through stress-testing during development, in-house quality assurance, and beta site field testing. And, CYDEX Corporation has, as well, a heritage of developing robust, critical-purpose systems for diverse industries. We take the development of such large-scale commercial applications quite seriously and very little (if anything) is ever left to chance. Our client is a roughly 50 million dollar-a-year business. Lost minutes of business activity can translate into lots of lost revenue and lots of unrecoverable profitability.

“An application with such pervasive integration also has an enormous exposure in terms of comprehensive inoperability when something goes wrong. Needless to say, upon hearing that everything was literally de-railed for this client, the call for technical support was escalated quickly through my company.

“Since new system components are being deployed to this customer site on a regular basis, my first instinct was to believe that we ‘broke’ something. But, the descriptions of the symptoms of system failure just didn’t convince me that there was a single point of failure in a single component within the most fundamental sub-system of the enterprise architecture. Basically meaning: I didn’t think that we could have broken the underlying transaction mechanisms for this application — AND, I also dreaded the possibility that we’d have to ‘open the hood’ and hurriedly investigate code that had performed flawlessly — and that was untouched — for more than a decade!

“The thing that was the most striking about the system failures was that it looked like the performance of database update transactions was simply totally random. Knowing that the architecture of our application strictly managed synchronization between components, we had to believe that there was an EXTERNAL influence — and that this external influence was simply an inexplicable performance issue or failure on the operating system level. But, the really confusing thing was, that transactions to the database files WERE being processed without failure — just simply unsynchronized and without the integrity of certain indices being updated correctly.

“We reasoned that the single point of performance failure could only be in the file system; so, on a hunch, we executed a disk defragmentation operation. [Please note that this customer had not yet purchased and installed Diskeeper — and that was just an item on their I.T. ‘to do’ list.]

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## **The Solution provided by Diskeeper Corporation**

When asked how CYDEX first became interested in Diskeeper, Sotolov reported, “Diskeeper was already in our toolkit. We knew about it; we’ve used it extensively; we’ve recommended it; and most importantly, we thoroughly understood what it does and what that can mean to optimal system performance and proper operation.

“We’ve used Diskeeper for years. We’ve seen firsthand how systems perform better when disk defragmentation is prevented and eliminated. We’ve become ‘Diskeeper evangelists’ concerning best practice recommendations to clients and their system administrators. For most clients, our recommendation is simply enough. In this particular situation, the client was immediately convinced of the necessity of having automated, periodic disk defragmentation.

Diskeeper’s automated functionality is a critical component in guaranteeing the successful operation of mission-critical systems.



“Diskeeper was immediately installed on the primary database file server. It is my understanding that it will be installed on each of the other six network servers ASAP.

Operations have never faltered since the original problem was solved. Performance continues at peak levels!

“Reliable file and record access times assure that our mission critical systems continue to operate reliably. We most enjoy the ‘Set It and Forget It’<sup>®</sup> configuration, minimal impact on system performance, and most significantly, reliable operation.”

## The Financial Benefits / Results

“Our reputation as a solution provider and valued I.T. resource remains intact,” stated Sotolov. “Our application’s up-time reliability remains unquestioned. Everybody’s confidence that things are and will continue operating smoothly is unabated.

“Our job (as a solution provider and technical support contractor) is certainly easier. We now know exactly how degraded performance can become [even on new hardware] and how we can quickly recognize that situation. We know that we do not need to frantically debug proven components of our enterprise-scale software. As a reseller, we know that we can rely upon Diskeeper’s demonstrable quality and performance to provide a meaningful solution to our client.”

A moment of intense insight — and a quick execution of the intrinsic Diskeeper defragmentation utility with the operating system — turned a potentially disastrous incident into a minor interruption.

“Disk fragmentation is an equal-opportunity menace,” said Sotolov. “And Diskeeper’s ability to mitigate the problem makes it an invaluable tool. We recommend Diskeeper with Automatic Defrag to ALL of our clients!”

Internal case: CYDEX staff believe the InvisiTasking<sup>®</sup> technology is really wonderful. They use the Diskeeper EnterpriseServer edition on a 5-Server network for large scale data storage. The bottleneck is in retrieval of these hundreds of KB files and disk access across the RAID is very important. Severe fragmentation in any data element bogs performance. Their software developers do large compiles constantly and have seen 100+ percent improvement in disk performance through use of Diskeeper period!

